





Suspender cables hanging from south main suspension cable on east main side span.

### Media Relations & Public Outreach

- Interfaced with print and broadcast media for 12 hours on site after crane accident on Narrows Bridge March 27.
- Arranged interviews and site access for ongoing newspaper stories.
- Assisted TNC in pre-production discussions with National Geographic for a television documentary on the bridge.
- Hosted five project tours, including one to the Northwest Construction Consumer Council.
- Delivered TNB presentations to Puyallup Teachers Association, and statewide professional engineers meeting, among others.
- Coordinated with members of committee for War Memorial Park Celebration on May 13 event.



One bridge section being transported within Samsung Heavy Industries facility, South Korea  $\,$ 

# Overseas bridge work 95% complete

Over 95% complete, the 46 deck sections that will form the new bridge deck await the voyage from Korea to the Narrows. The bridge section shown above gives a clear view of the open steel truss design. This design can accommodate a second deck should one be necessary in the future. In the photograph below, a tug guides a barge supporting two deck sections at Samsung Heavy Industries in Korea. The deck sections will travel to the Narrows on three separate cargo ships. The first ship will deliver 16 sections and will arrive in mid-June. Over a four-month period, each ship will deliver its cargo and will stay moored in the Narrows as one deck section at a time is methodically lifted into place. The average deck section measures 120 feet in length and 72 feet in width.



Two bridge sections being transported from Samsung Heavy Industries, South Korea



# **Toll Operations**

### March

- WSDOT completed review of factory testing documents, the Operations Guide, the amended Final System Design Document Chapter 8 Violation Processing System, and Commissioning Test Procedures
- TransCore continued installation of hardware in the Administrative building

#### Apri

- WSDOT will roll out the tolling logo and "brand" name
- TransCore will begin the commissioning test, the second of three major system tests;
- TransCore will continue installation of hardware in the lanes and Administrative Building
- The application period for the Citizens Advisory Committee will close April 30.

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For more information about the bridge project, visit the TNB web site:

www.tacomanarrowsbridge.com



# Tacoma Narrows Bridge Project Monthly Progress Report

March 2006

# Progress to Date

(% Complete)

Design 99.9%

Construction 76.8%

Total (1) 78.4%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100

(1) Weighted 7% Design progress and 93% Construction progress

# **New Bridge Statistics:**

Bridge Length: 5,400 ft. (overall)

**Main Span:** 2,800 ft. (tower to tower) 69 pairs of suspender hangers per side

**Side Span, East:** 1,200 ft. 29 pairs of suspender hangers per side

**Side Span, West:** 1,400 ft. 34 pairs of suspender hangers per side

### Suspended Roadway:

(deck panels, barriers, utilities)

- 53 million lbs.
- 46 deck sections
- 120-ft. by 78-ft. is size of average section

### Towers: 510 ft. tall

- 8,500 cubic yds. concrete (per tower)
- 2.9 million lbs. of reinforcing steel (both)

### Caissons (tower foundations, each):

- 85,000 tons (total weight)
- 6 million lbs. of reinforcing steel
- 40,500 cubic vds. concrete (Tacoma)
- 37,000 cubic yds. concrete (Gig Harbor)

### Anchorages (each):

- 81 million lbs. (total)
- 20,000 cubic yds. concrete
- 1 million lbs. of reinforcing steel

#### Cable Diameter (each): 20.5 inches

- Cable contains 19 strands of 464 wires
- Total steel wires per cable is 8,816
- Each steel wire is the diameter of a pencil

### Structural Steel, Superstructure:

(Parts of the bridge above water) 35.5 million lbs.

# Structural Steel, Suspension System: (Cable wire and saddles atop towers) 12 million lbs.

New Parallel Bridge Completed: Early 2007 1950 Bridge (Retrofit) Completed: Early 2008

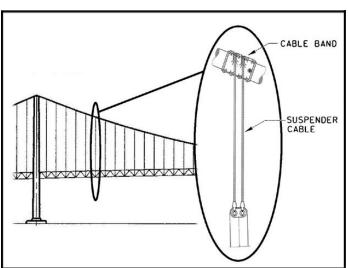


Suspender cable connected to south main suspension cable band.

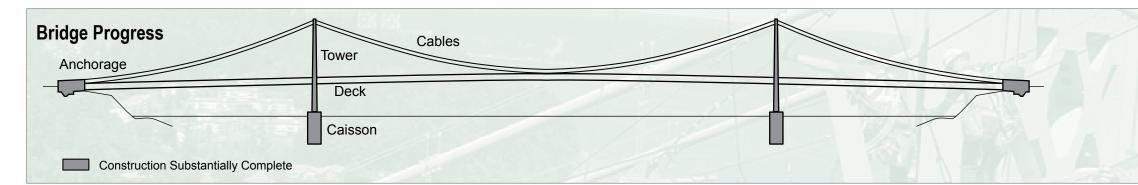
Suspender cables on south main suspension cable.

# Suspender cable installation begins

On March 27, Tacoma Narrows Constructors (TNC) attached the first of 132 pairs of suspender cables to the south main suspension cable. The 1-5/8" diameter wire rope suspender cables will connect the main suspension cable to the bridge deck. The diagram below depicts a typical main cable/suspender cable connection. Pairs of suspenders are attached every 40 feet along the length of the main suspension cable. When all of the suspender cables are connected, they will range in height from seven to 290 feet. Once TNC finishes spinning and compacting the north suspension cable, they will connect another 132 pairs of suspender cables to that cable. Most of the bridge's weight, as well as the weight of the vehicles and pedestrians on the bridge, are suspended

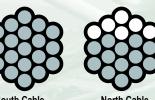


from the cables. With the completion of the cables, bands, and suspenders, TNC will be prepared to begin lifting deck sections into place. WSDOT expects the first of three ships carrying deck sections to arrive in mid-June.



### Main Cable Progress

Fach circle represents a "strand" or 464 wires



(Looking West)





Installing permanent cable band on south suspension cable

## **Bridge Progress**

TNC completed the installation of the cable bands for the south main cable this month and began installing suspender cables near the east anchorage. Six strands were spun on the north cable and as of March 31, 13 of 19 strands had been spun. TNC has also installed 14 flights of stairs in the Tacoma tower.

TNC removed the shipping containers used as offices on the existing bridge pier tops, completed the removal of the tower crane on the Gig Harbor tower and continues to remove tower crane on the Tacoma tower.

Activities scheduled for April include:

- Complete spinning of the north cable
- Begin compaction of the north cable
- Complete the installation of suspender cables for the south cable
- Continue to install stairs in the Tacoma tower
- Complete the tower block-out pours
- Complete crane removal on Tacoma tower

### Milestone Outlook

Milestone	Contract	WSDOT Forecast	Months Ahead
Lift first deck unit	07 May 06	19 Jun 06	-1.4
Complete Superstructure joining of deck sections	03 Dec 06	30 Nov 06	0.1
Toll System complete and functional	01 Jun 06	01 Jun 06	0.0
Complete new bridge and open to traffic	02 Apr 07	02 Apr 07	0.0
Complete existing bridge modifications	26 Feb 08	26 Feb 08	0.0

# Roadway/Roadside Progress

During March, TNC continued prep work for the paving season by cutting the ditches to grade along the eastbound shoulder. Existing bridge seismic retrofit work progressed steadily, with the column casings near the east anchorage either on site or installed, and the lower wall and foundations in the east anchorage completed. At the Toll Plaza, TransCore has finished the installation of equipment in the express lanes and has nearly completed installation of equipment in the manual lanes.

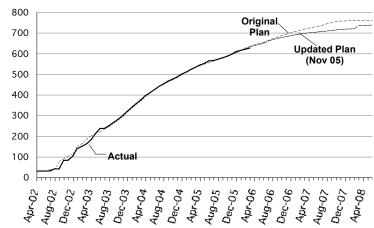
Upcoming activities for April include continued preparation for the paving season, completing installation of the column casings at the east anchorage, removing the formwork on the east (Tacoma) tower on the existing bridge, and completing installation of tolling equipment in the manual lanes.

### **Financial Status**

Project Cost Summary (in Millions)	Budgeted	Expended
Design-Build Contract	\$615.0	\$545.9
Toll System Contract	9.2	7.1
WSDOT Oversight	41.0	19.8
Contingencies Committed	13.4	11.7
Contingencies Remaining	41.3	_
Phase I Dev. Cost (UIW)	40.5	39.8
Total	\$760.4	\$624.4
Total Expended/Total Cost	82 1%	

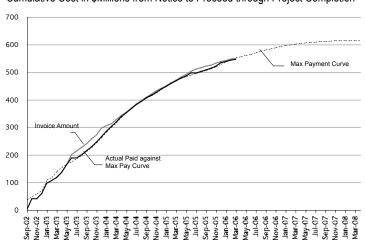
### **Project Cash Flow – Planned vs Actual Expenditures**

April 2002 to June 2008 (Dollars in millions)



### **Design Build Contract**

SR 16 Tacoma Narrows Bridge Project Cumulative Cost in \$Millions from Notice to Proceed through Project Completion



### **Environmental Performance**

The Tacoma Narrows Bridge Project is conducting several environmental improvement projects as part of the construction of the new bridge. One of those efforts is to improve public access at Hidden Beach, property owned by Tacoma Metro Parks near Titlow Beach along the Tacoma shoreline. In March, much of the permitting work was completed which will allow the project to go forward with construction work this summer. Improvements include new handrails and stone staircase. Regulatory approvals included tribal consultation under the National Historic Preservation Act and compliance with Endangered Species Act.

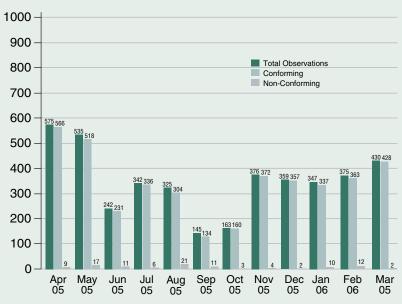
The project also had one environmental incident this month when a crane accident on the existing bridge resulted in a release of approximately 8 gallons of diesel fuel. The photo indicates the severity of the crane accident. Although there was a diesel fuel spill, prompt action and the ready presence of a spill kit prevented a larger incident. No one was injured in the accident.



Crane accident on March 27 during seismic retrofit work on existing bridge (no injuries).

### **Quality Performance**

During March WSDOT staff completed the following audits:



WSDOT employs a Compliance Audit System to ensure that work on the project conforms to contract requirements. Compliance audits are conducted regularly in two areas: construction activities occurring in the field, and management policies and systems designed to ensure a quality product.

Compliance Audit System findings for the month of February are as follows:

- 45 individual audits of design/builders work activities
- 430 contractual requirements observed and verified for compliance
- 2 non-conformance findings
- 28 total outstanding non-conformance findings

The 28 outstanding non-conformances are within normal expectations for a project of this size. WSDOT continues to actively resolve the non-conformance issues with the design-builder. The overall audit findings continue to indicate the construction work is generally complying with contract requirements.

# Safety Performance

2.184.287 hours with one lost-time accident

2,10 1,207 Hours Will one lost time adolation.										
March 06	Hours Worked	Recordable Cases	LWD Cases	Lost Workdays	Restricted Cases	Restricted Days	Fatalities			
TNC	41,737	3	0	0	0	4	0			
WSDOT	5,529	0	0	0	0	0	0			
Total	47,266	3	0	0	0	4	0			
Project to Date										
TNC	1,953,004	24	1	22	7	215	0			
WSDOT	231,283	1	0	0	0	0	0			
Total	2,184,287	25	1	22	7	215	0			

The three recordable incidences were a worker who fractured a toe while installing permanent cable bands; a worker who strained a shoulder rotator cuff while pulling a winch line, and a worker who strained his lower back while installing suspender cables.